Dec. 13, 1927. 1,652,422

M. ASCHERL

SPRAY APPLIANCE

Filed July 22, 1924 2 Sheets-Sheet 1

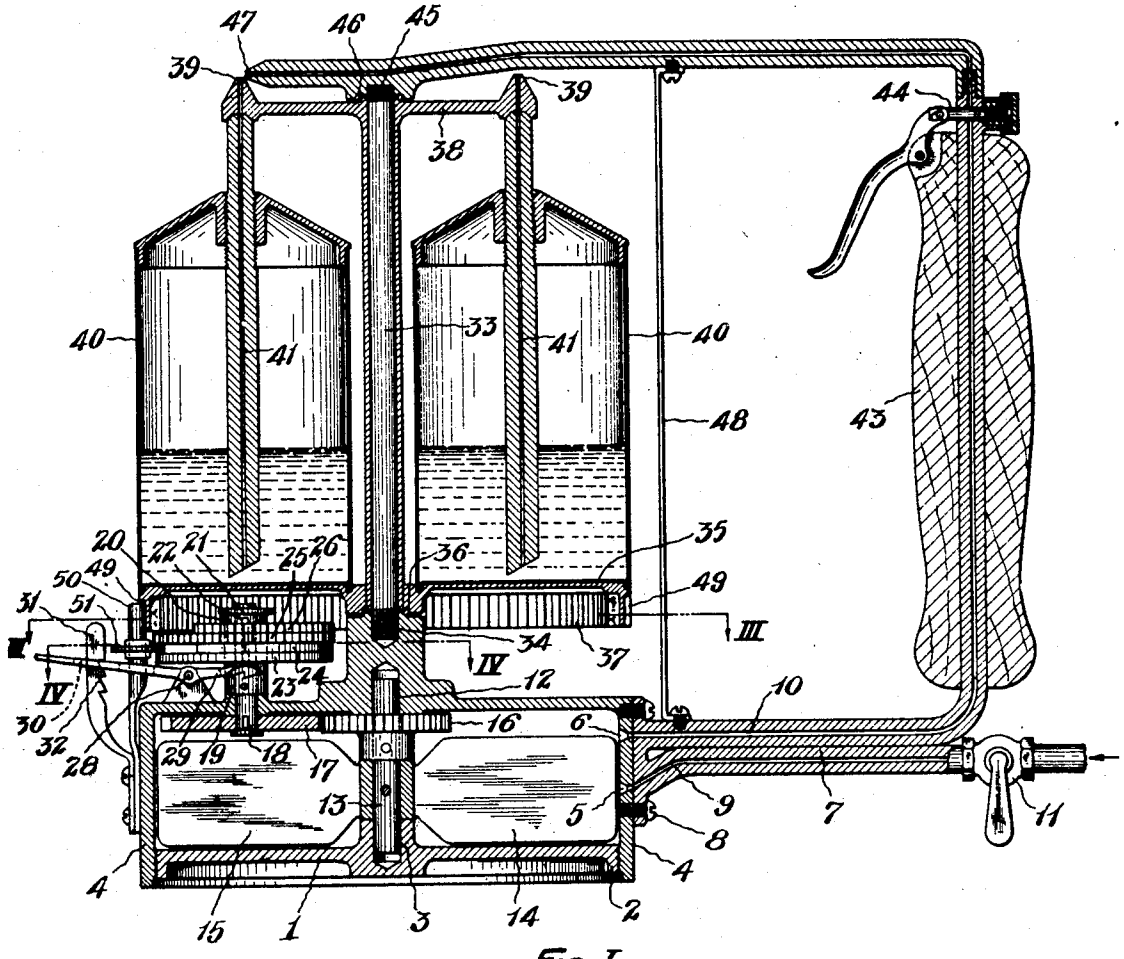


FIG. I

INVENTOR:
MICHAEL ASCHERL
by his atty.

Dec. 13, 1927. 1,652,422

M. ASCHERL

SPRAY APPLIANCE

Filed July 22, 1924 2 Sheets-Sheet 2

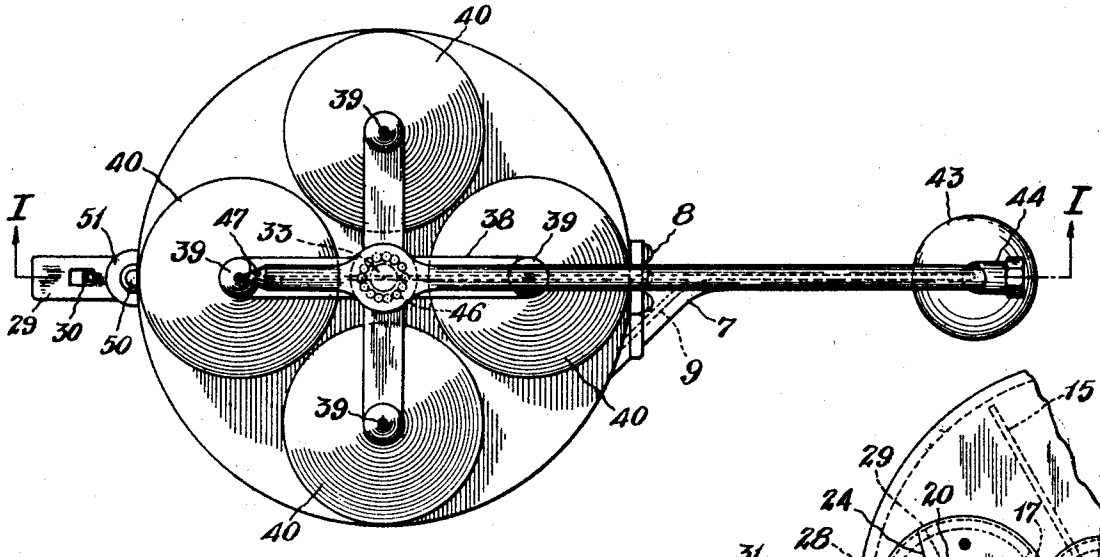


FIG. II

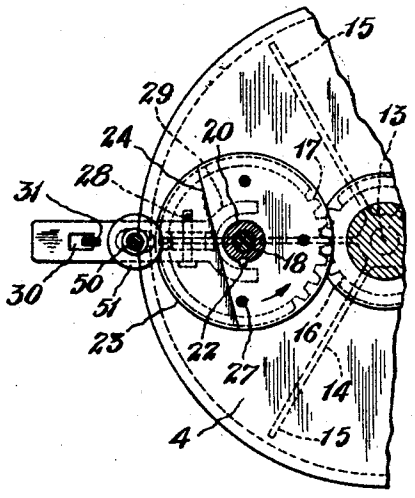


FIG. IV

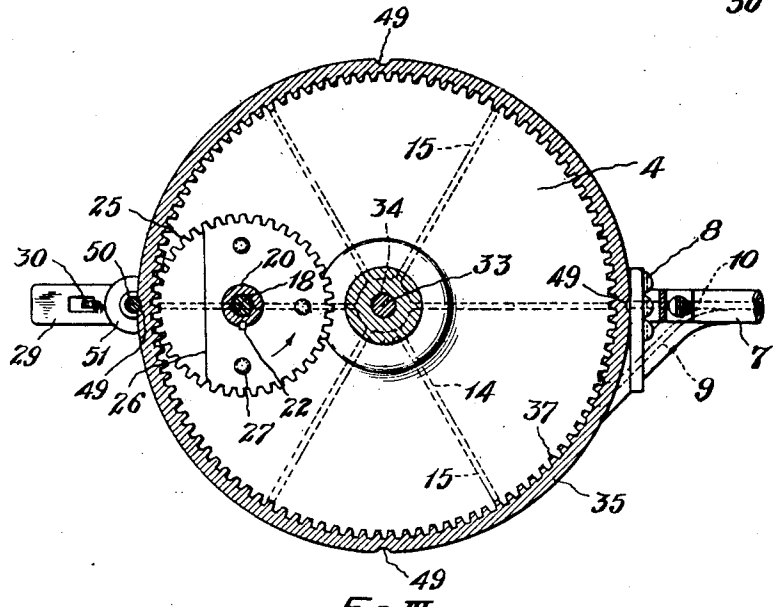


FIG. III

INVENTOR:
MICHAEL ASCHERL
By his atty
Ernest B. Mueller.

Patented Dec. 13, 1927. 1,652,422

UNITED STATES PATENT OFFICE.

MICHAEL ASCHERL, OF CLEVELAND, OHIO.

SPRAY APPLIANCE.

Application filed July 22, 1924. Serial No. 727,502.

My invention pertains to a spraying apparatus and more particularly, as exemplified by the drawings, to a multi-color spray device which is portable and which utilizes compressed air not only to project a powder or fluid from a discharge nozzle, but also to constitute the motive power for intermittently moving different containers into operative position.

The object of my invention is to facilitate, expedite and cheapen the application of color coats for instance, to picture frames. A control agency and a locking device are provided for purposes which will hereinafter appear.

Adverting to the drawing:

Figure I is a vertical axial section through a spraying appliance embodying my invention.

Figure II is a top plan view of Figure I.

Figure III is a plan section on line III—III of Figure I.

Figure IV is a plan section on line IV—IV of Figure I.

A round member 1, is provided with a threaded rim 2, and centrally with a bearing 3. Detachably fitted to the member 1, is a cap 4 forming a compartment in conjunction therewith. The cap 4 is fashioned on one side with an inlet 5 and an outlet 6. A hollow structure 7 is attached to the cap 4 by means of screws 8 and has inflow and outflow ducts 9 and 10 for the passage of compressed air controllable by means of a valve 11. As appears in Figure III, the duct 9 communicates nearly tangentially with the compartment.

Mounted in the bearing 3 and in another bearing 12 in the cap is a shaft 13 upon which is keyed for rotation within the compartment a rotor 14 carrying vanes 15. Also keyed to shaft 13 is a pinion 16 which meshes with a gear 17 fixed on the lower end of a shaft 18 which projects through the cap 4 and carries a structure adapted as a clutch couple which include a lower element 19 keyed to the shaft 18 and an upper bushing 20 which is slidable along the shaft 18. The top of the bushing 20 is formed with a shoulder 21 and with a key-way 22 which latter permits of effecting the desired slidable and rotatable connection with said bushing of four members viz: a round disc 23 below, a cam 24 superimposed upon said disc, a complete gear 25 next above and a segmental gear 26 on top, which four elements are connected as a unit as for instance by rivets 27.

Pivoted to the top of the cap 4 at 28 is a double armed lever one extremity being designed as a lifting finger 29 for engagement with the disc 23. The other arm is fashioned with a slot 30 through which an upstanding arm 31 projects. The latter is notched at 32 to enable selective engagement with the edge of the slot 30 and hold the finger 29 and hence the quadruple unit at three desired elevations for reasons to be later explained.

A spindle 33 has a screw-threaded connection at 34 with the center of the cap 4 and carries near its lower end a support 35 having interposed between itself and the cap 4 a ball bearing 36. The support 35 is designed as an internal gear with which the gear 25 and segment 26 may be brought into mesh. Near its top the spindle 33 carries a spider 38 formed with four nozzles 39. The support carries four containers 40 each connected by a pipe 41 with one of the nozzles 39. The pipes 41 and containers 40 are in screw-threaded and therefore adjustable connection.

The outlet duct 10 passes through a handle 43 of the portable appliance and is subject to the control of a slide valve 44 beyond which the duct 10 is fitted at 45 to the top of the spindle 33 and has interposed between it and the spider 38 a ball bearing 46. The extremity 47 of the outlet duct is designed as a nozzle with which the four nozzles 39 are adapted successively to come into right angular opposition. A brace 48 connects the doubled-back sections of the duct 10.

The periphery of the cap 4 is supplied with four equispaced notches 49 in which a finger 50 yieldingly supported upon the cap is adapted to slip. The finger 50 carries a roller 51 which is adapted to be engaged either by the disc 23 or the cam 24.

My spraying appliance permits of effecting continuous, or intermittent container revolution or of cessation of revoluble movement Figure I shows the position of the controlling parts during intermittent revoluble actuation of the various containers. In accordance with the connections shown in Figure I, the operation is as follows:—

Air under pressure being allowed to enter the duct 9 by opening the valve 11, impinges against the vanes 15 to rotate in turn the shaft 13, pinion 16, gear 17, shaft 18, bushing 20, disc 23, cam 24, full gear 25 and gear segment 26 either of which latter may be positioned to mesh with the teeth of the

internal gear 37 whereby either continuously or intermittently to rotate the support 35 and containers thereon. The segment will have the necessary number of teeth to turn the support 35 through an angle of ninety degrees for each rotation of the shaft 18 during which time the cam 24 will by engagement with the roller 51 and at the proper time intervals regularly shove the finger 50 out of one of the notches 49 or permit it to slip into one and arrest further rotation of the support 35 while one of the nozzles 39 is opposed to the air discharge nozzle 47.

If it is desired continuously to rotate the containers the arm 29 is disengaged from a notch 32 and while the finger 50 is held out of a notch 49, the arm 29 depressed to raise the full gear 25 into engagement with the internal gear 37 and to bring the disc 23 instead of the cam 24 into the plane of the roller 51, in which position the parts may be held by causing the next lower notch 32 to functionate.

Continued depression of the arm 29 causes the gear segment 26 to engage the shoulder 21 to lift the bushing 20 and to disengage it from the driving clutch element 19 whereupon the spraying may be effected continuously to draw upon the supply of only one container.

I claim:

1. In an appliance of the character described the combination of a support, a container turnably carried by said support, a compressed air conduit adapted to co-operate with an opening in said container, and pressure operated means responsive to said agency for turning said container.

2. In an appliance of the character described the combination of a support, containers each provided with an outlet and revolubly carried by said support, a compressed air conduit adapted alternatively to cooperate with said outlets, and power means operatively associated with said agency for revolving said containers.

3. In an appliance of the character described the combination of a support, a plurality of containers each provided with an outlet and revolubly carried by said support, a compressed air conduit adapted successively to co-operate with said outlets and means adapted to be operated by said agency for intermittently revolving said containers.

4. In an appliance of the character described, the combination of a rotatable member, a rotor operatively connected with said member, a container carried by said member and provided with a discharge opening, and a compressed air conduit operatively associated with said rotor and with said discharge opening.

5. In an appliance of the character described, the combination of a rotatable member, a rotor operatively connected with said member, a container detachably carried by said member and provided with a discharge nozzle, and a compressed air conduit operatively associated with said rotor and discharging at the mouth of said discharge nozzle.

6. In an appliance of the character described, the combination of a rotatable structure including a compartment, a rotor in said compartment and operatively connected with said structure, a container adustably carried by said structure and provided with a discharge nozzle, and a compressed air conduit leading to said compartment and discharging near the mouth of said discharge nozzle.

7. In an appliance of the character described the combination of a support, a fluid container provided with an outlet and revolubly carried by said support, a rotor, an air duct operatively connected with said rotor and adapted to cooperate with said outlet, and means operable by said rotor for revolving said container.

8. In an appliance of the character described the combination of a support, a plurality of containers each provided with an outlet and revolubly carried by said support, a compressed air conduit adapted successively to cooperate with said outlets, and selectively operable mechanism for intermittently or continuously revolving said container.

9. In an appliance of the character described the combination of a support, containers revolubly carried by said support in circumferential relationship with respect to each other, a compressed air conduit adapted to cooperate with an opening in each of said containers, and means for intermittently revolving said containers only through an arc determined by the circumferential spacing of the openings therein.

10. In an appliance of the character described, the combination of a turnably mounted container provided with a discharge outlet, a compressed air conduit adapted to cooperate with said outlet, means for turning said container, and means for arresting the turning movement periodically.

11. In an appliance of the character described, the combination of a rotatable support, a plurality of circumferentially arranged containers mounted upon said support and each provided with an outlet, a compressed air conduit including a discharge nozzle in operative proximity to the orbital movement of said containers and adapted alternatively to cooperate with any one of said outlets, means for rotating said support, and automatically operating means for periodically arresting the rotating movement of said support.

12. In an appliance of the character de-

scribed, the combination of a turnably mounted container provided with a discharge outlet, a compressed air conduit adapted to cooperate with said outlet, mechanism including shiftable selective units for turning said container, and means for shifting one of the selective units to an inutile position.

13. In an appliance of the character described, the combination of a rotatable support, a plurality of circumferentially arranged containers mounted upon said support and each provided with an outlet, a compressed air conduit including a discharge nozzle in operative proximity to the orbital movement of said containers and adapted alternatively to cooperate with any one of said outlets, a rotor connected with said support and adapted to be driven by impingement of the air discharged from said conduit, automatically operating mechanism including a device for arresting the rotating movement of said support when one outlet reaches said nozzle and including means for controlling the position and function of said device.

Signed by me, this 21 day of July, 1924.

MICHAEL ASCHERL.